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(2579) Proposal to conserve *Aspidium draconopterum* (*Draconopteris draconoptera*) (*Tectariaceae*) with a conserved type

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(2579) *Aspidium draconopterum* D.C. Eaton in Mem. Amer. Acad. Arts, ser. 2, 8: 211. Dec 1860, nom. cons. prop.
Typus: Costa Rica, Heredia, Cantón Sarapiquí, La Selva Field Station, at the arboretum, above river, with *Danaea nodosa*,

etc.; moist secondary forest, 20 Jan 2008, Rothfels 08-173 (UC barcode UC2030227 (part 1) & barcode UC2030228 (part 2); isotypi: CR, DUKE barcode DUKE398420, INB), typ. cons. prop.

Two relatively widespread and superficially similar fern species, frequently confused in herbarium collections and field surveys, reside in neotropical forests. These have long been called *Tectaria draconoptera* (D.C. Eaton) Copel. (in Philipp. J. Sci., C 2: 410. 1907) and *Tectaria nicotianifolia* (Baker) C. Chr. (Index Filic., Suppl. Tert.: 182. 1934), e.g., by Moran in Moran & Riba, Fl. Mesoamer. 1: 204–209. 1995. Although similar morphologically, they are clearly distinct. In fact, molecular analyses demonstrate that they are members of distantly related lineages within *Tectariaceae* (Moran & al. in Syst. Bot. 39: 384–395. 2014; Zhang & al. in Taxon 65: 723–738. 2016; Zhang & al. in Molec. Phylogen. Evol. 114: 295–333. 2017). Based on recent molecular phylogenetic studies, they have been treated (e.g., by Zhang & al., l.c. 2016; PPG 1 in J. Syst. Evol. 54: 563–603. 2017) in separate genera, as *Draconopteris draconoptera* (D.C. Eaton) Li Bing Zhang & Liang Zhang (in Taxon 65: 732. 2016) and *Hypoderris nicotianifolia* (Baker) R.C. Moran & al. (l.c.: 389).

Draconopteris draconoptera, the type of the monotypic generic name, is locally common in tropical evergreen forests from Mesoamerica to Peru, Bolivia, and western Brazil (Moran in Moran & Riba, l.c.; Labiak & Prado in Amer. Fern J. 97: 113–123. 2007). Phylogenetically, it is a deeply isolated component of *Tectariaceae* (sensu Zhang & al., l.c. 2016 and PPG 1, l.c.), forming a clade with the paleotropical genera *Malaiifilix* Li Bing Zhang & Schuettp. (in Taxon 65: 733. 2016) and *Pteridrys* C. Chr. & Ching (in Bull. Fan Mem. Inst. Biol. Bot. 5: 129. 1934; see Zhang & al., l.c. 2016). *Hypoderris nicotianifolia* is similarly widespread, occurring from Belize to western Ecuador (Moran in Moran & Riba, l.c.; see map in Moran & al., l.c.), and can be distinguished from *D. draconoptera* by creeping rhizomes with two-ranked leaves (versus ascending rhizome with leaves radially arranged; Moran & al., l.c.) and generally smaller size. *Hypoderris* R. Br. ex Hook. (in Hooker, Gen. Fil.: t. 1. 1838. 1830) is sister to *Triplophyllum* Holttum (in Kew Bull. 41: 239. 1986). Both genera have creeping rhizomes, whereas the “core” *Tectariaceae* usually have erect or decumbent rhizomes (Moran & al., l.c.).

The basionym of *Draconopteris draconoptera* is *Aspidium draconoptera* D.C. Eaton (in Mem. Amer. Acad. Arts, ser. 2, 8: 211. 1860). The type of these two names is *Schott 19* (YU; image available at <https://plants.jstor.org/stable/10.5555/al.ap.specimen.yu000839>). Based on an examination of this type and its duplicates at K and NY, we believe it represents *Hypoderris nicotianifolia* (basionym: *Polypodium nicotianifolium* Baker in Hooker & Baker, Syn. Fil.: 455. 1868; lectotypified on *Spruce 5723* (K) by Lellinger in Proc. Biol. Soc. Wash. 89: 703–732. 1977). This revelation results in the following nomenclatural cascade:

- (1) *Draconopteris* becomes a later synonym of *Hypoderris*, and so is unavailable.
- (2) The species known as “*Draconopteris draconoptera*” requires a new genus name; none is currently available for this taxon.
- (3) The epithet “*draconoptera*” no longer applies to the taxon to which it has long been associated (*Aspidium/Polypodium/Tectaria/Draconopteris draconoptera*; e.g., by Sodiro, Vasculares Quitenses: 1–656. 1893; Tryon & Stolze in Fieldiana, Bot., ser. 2, 27: 1–176. 1991; Moran in Moran & Riba, l.c.; Jorgensen & León-Yáñez in Monogr. Syst. Bot. Missouri Bot. Gard. 75: 109–187. 1999; Labiak & Prado, l.c.; Gómez & Arbeláez in Stevens & al.,

Fl. Nicaragua 4: 153–158. 2009; Idárraga & al., Fl. Antioquia 2: 1–944. 2011; Zhang & al., l.c. 2016, 2017; PPG 1, l.c.). Instead, the epithet that would apply to this taxon would be *myriosorum* based on *Aspidium myriosorum* Christ (in Bull. Herb. Boissier, sér. 2, 5: 256. 1905). That epithet has long been considered a heterotypic synonym of *Tectaria draconoptera* (see, e.g., Lellinger, l.c.; Moran in Moran & Riba, l.c.) and has no history of use.

- (4) Because *Aspidium draconoptera* predates *Polypodium nicotianifolium*, the taxon long recognized under the epithet “*nicotianifolia*” (e.g., Sodiro, l.c.) would get the epithet of its morphological look-alike, becoming *Hypoderris draconoptera* (a combination that would need to be published).

So, instead of *Draconopteris draconoptera* and *Hypoderris nicotianifolia*, we would be left with “Newgenus” *myriosorum* and *Hypoderris draconoptera*: one recently published generic name reduced to synonymy, one new generic name required, and two new combinations needed. This instability would be exasperating, especially given that it is due solely to a nomenclatural oversight and not to changes in our understanding of the evolution of the taxa in question or their circumscription. It would also be irritating because this area of fern phylogeny has been subject to a disproportionate number of recent genus- and family-level name changes (see, e.g., Liu & al. in Taxon 62: 688–700. 2013; Moran & al., l.c.; Zhang & al., l.c. 2016, 2017; Chen & al. in J. Pl. Res. 1–10. 2017). Arguably, the worst consequence, however, would be the application of the epithet “*draconoptera*” to a different species. The two species in question, “*Draconopteris draconoptera*” and “*Hypoderris nicotianifolia*”, are already frequently confused due to their morphological similarities. Having to adopt “*draconoptera*” for the latter species will exacerbate this situation for workers in both the field and herbaria (e.g., see Kessler & Smith in Phytotaxa 334: 248–254. 2018).

Admittedly, there is nothing incorrect about the original typification of *Aspidium draconoptera* as it in no way conflicts with the protologue; there has only been a failure over the years to look at, interpret, and realize the identity of the type specimen. But to avoid the above negative consequences, we propose that the name *Aspidium draconoptera* be conserved with the new type listed above. Both morphological and molecular data demonstrate that the proposed type specimen is referable to *Draconopteris draconoptera* as that name is currently used (Zhang & al., l.c. 2016). Conservation of the name and the new type are permitted (and encouraged) by Art. 14.1 and 14.9 of the Code (McNeill & al. in Regnum Veg. 154. 2012).

Acceptance of this proposal would allow the continued use of the names *Draconopteris draconoptera* and *Hypoderris nicotianifolia* in their current sense (and in the sense of their long-standing synonyms, *Tectaria draconoptera* and *Tectaria nicotianifolia*). Rejection of this proposal would not only necessitate the publication of a new genus and two new combinations but would lead to particular confusion because of the switching of the epithet “*draconoptera*” between these two superficially similar species.

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